Out-of-this-World Science Project to be Featured as Keynote at SC17's High Performance Computing Conference in Denver

Denver, CO – August 16, 2017 **–** Professor Philip Diamond, Director General of the international Square Kilometer Array (SKA) project, will be the keynote speaker at SC17, the International Conference for High Performance Computing, Networking, Storage and Analysis in Denver, Nov. 12-17.

SKA is an international collaboration to build the world's largest radio telescope that will change our understanding of space as we know it.

Professor Diamond, accompanied by Dr. Rosie Bolton, SKA Regional Centre Project Scientist, will take SC17 attendees around the globe and out into the deepest reaches of the observable universe as they describe the SKA's international partnership that will map and study the entire sky in greater detail than ever before.

When completed, the SKA telescope will be at the forefront of scientific research, from looking at how the very first stars and galaxies formed just after the big bang to helping scientists understand the evolution of the universe and the nature of the mysterious force known as dark energy.

As Director-General of the SKA, Prof. Diamond coordinated the global effort to establish and now oversee 12 international engineering consortia, bringing together over 100 companies and research institutes and 600+ experts in 20 countries to design the SKA.

"The SKA is one of the most ambitious science enterprises of our times," said Bernd Mohr, SC17 Conference Chair from Juelich Supercomputing Centre. "Professor Diamond and Dr. Bolton's visually stunning and information rich-presentation will captivate as they describe one of the largest scientific endeavors in history, incorporating the world's largest scientific instrument – a global science project of unprecedented size and scale and a prime example of our conference's HPC connects theme."

Thousands of antennas distributed across two continents will generate petabytes—quadrillions of bytes—and eventually exabytes (one exabyte is a quintillion bytes) of data, making the SKA a bleeding-edge project in the era of big data and extreme-scale computing.

With its unique ability to pick up smaller and fainter objects in the sky than any other radio telescope, the SKA will enable astronomers to make discoveries in areas as diverse as the formation of Earth-like planets, the detection of gravitational distortions of

space-time in our galaxy, the origin of cosmic magnetic fields, and the understanding of the formation and growth of black holes.

“Like Wi-Fi and the World Wide Web before them, some of these innovations will trickle down to society and be applied in other fields,” said Diamond. ”For instance, spin-offs in areas linked to the SKA’s computing activities could benefit other power-efficient systems that need to process large volumes of data in remote areas from geographically dispersed sources.”

As SKA Regional Centre Project Scientist, Dr. Bolton is looking at how to distribute hundreds of petabytes of data products per year to thousands of scientists around the world and also determine best practices based on how the scientific community will interact with that data.

The SKA is already driving technology development in collaboration with industry to act as a testbed of emerging technologies for potential future market applications. Potential areas of innovation include data management techniques; data mining and analytics; and imaging algorithms, remote visualization, and pattern matching—all of which can impact areas such as medicine, transportation, and security. The project is also committed to outreach, education, and training in developing countries.

Professor Philip Diamond

Professor Philip Diamond is the Director-General of the SKA (Square Kilometre Array). He was appointed to this position in October 2012, and is responsible for the team designing and ultimately constructing the SKA Professor Diamond’s many research interests include studies of star birth and death, galactic and extra-galactic supernovae and discs of gas rotating around super-massive black-holes at the centres of galaxies. He has published more than 300 research papers on astronomy.

Dr. Rosie Bolton

Dr. Bolton acts as the SKA Regional Centre Project Scientist as well as Project Scientist for the international engineering consortium designing the High Performance Computers that will generate some 300 petabytes of data per year of initial science data products for the SKA. Dr. Bolton is also looking at how to distribute those data products to the user community of thousands of scientists around the world and how they will interact with the data.

About SC17

SC17 is the premier international conference showcasing the many ways high performance computing, networking, storage and analysis lead to advances in scientific discovery, research, education and commerce. The annual event, created and sponsored by the ACM (Association for Computing Machinery) and the IEEE Computer Society, attracts HPC professionals and educators from around the globe to participate

in its complete technical education program, workshops, tutorials, a world-class exhibit area, demonstrations and opportunities for hands-on learning.

For more information about SKA, visit: http://skatelescope.org/